

ABSTRACT

Disclosed are novel peptides inhibitory of the activity of vascular endothelial growth factor (VEGF) and their use in the treatment of angiogenesis-related diseases, including cancer. A combinatorial library of peptides consisting of six amino acid residues were chemically synthesize and, from the library, specific amino acid residues for each amino acid position were screened by comparing their inhibitory activity against VEGF binding to the cell surface receptor. The novel peptide sequences thus obtained bind to VEGF and block the binding of VEGF to its receptors present on the surface of vascular endothelial cells, thereby inhibiting the hormonal activity of VEGF. The peptides inhibit the angiogenesis induced by VEGF and human cancer cells. Also, the peptides inhibit growth and metastasis of human cancer cells transplanted to mice. Thus, the peptides can be used to treat angiogenesis-related diseases, including cancer, diabetic retinopathy, rheumatoid arthritis, etc.